AUTOMATIC FIRE PUMP PRIMING SYSTEM FOR INDUSTRIAL PUMP

A Trident Model system (Model #31.013.42) automatic air operated multiple priming system will be installed. The unit will be of all brass and stainless-steel construction and designed for large capacity fire pumps of up to 3,000 GPM (11,350 LPM). Due to corrosion exposure, no aluminum or vanes will be used in the primer design. This unit will consist of two (2) primers operated by a single panel mounted control. Each primer will be of a two-barrel design with ¾” NPT connections to the fire pump.

The primers will be mounted above the pump impeller so that the priming line will automatically drain back to the pump. The primers will also automatically drain when the panel control actuator is not in operation. The inlet side of the primers will include brass ‘wye’ type strainers with removable stainless steel fine mesh screens to prevent entry of debris into the primer bodies.

Performance, Safety, and NFPA Compliance

The priming system will be capable to a vertical lift to 22 inches of mercury and will be fully compliant to applicable NFPA standards for vertical lift. The system will create vacuum by using air from the chassis air brake system through a two-barrel multi-stage internal “venturi nozzles” within the primer body. The noise level during operation of the primer will not exceed 75 Db.

Air Flow Requirements

The primer will require a minimum of 20 cubic foot per minute air compressor and will be capable of meeting drafting requirements at high idle engine speed. The air supply will be from a chassis supplied ‘protected’ air storage tank with a pressure protection valve. The air supply line will have a pressure protection valve set between 70 to 80 PSIG.

Automatic Primer Control

The 12 volt primer control will be an “automatic” type, with a pump panel three-way switch to operate an air solenoid valve. The air valve will direct air pressure from the air brake system to the primer. To prevent freezing, no water will enter the primer valve control.

The automatic priming switch will have three positions as follows:

* **“Prime” –** The lower position will be a momentary “push to prime”. The “Prime” position also allows the operator to “ramp” test the primer without the fire pump being engaged.
* **“Off” –** Center position.
* **“Auto-Prime”** **–** In the upper position, a “green” LED pilot light will be illuminated when the switch is the auto-prime position. The “Auto-Prime” operates automatically when the pump pressure drops below 20 PSIG. The primer shuts “off” automatically when the pump pressure is re-established and exceeds 20 PSIG. The “Auto” mode only operates when the fire pump is engaged.

Power Requirements

To reduce the electrical power requirements on the fire apparatus the priming system will be air powered. The system will not require annual tear-down and maintenance, an electric motor, lubrication, belt drive, or clutch assembly. The maximum current draw will not exceed 0.5 amps during operation.

Warranty

The primer will be covered by a five (5) year parts warranty.